STIC Search Report
EIC 2800

STIC Database Tracking Number: 154039

TO:	From:
Erik Kielin **Location: JEF-7D25** **Art Unit : 2813** **Tuesday, June 07, 2005** **Case Serial Number: 10/696,060**	**Jeff Harrison** **Location: EIC 2800** **JEF-4B68** **Phone: 22511**

Search Notes

Re: Iridium with structures of phenylpyridine

Please find attached the search history and the best of the edited search results from Chemical Abstracts and CA Registry file.

See the two tagged items, which are the closest I found. The structures are OK, but they both lack the fluorine.

If you would like more searching on this case, or if you have questions or comments, please let me know.

Respectfully,
Jeff Harrison

CAS/STN FILE 'REGISTRY' ENTERED AT 10:23:17 ON 07 JUN 2005

```
L1            1  S   QUINOLINE/CN
L2            1  S   2-BENZAZINE/CN
L3            1  S   ISOQUINOLINE/CN
L4        17744  S   591.50.52/RID AND (BENZENE OR PHENYL)
L5            1  S   PHENYLISOQUINOLINE/CN
L6        22305  S   591.50.52/RID  AND 46.150.18/RID
L7       233038  S   (PHEN#### OR BENZ######)(4A)(ISOQUINOLIN?
                 OR QUINOLIN? OR BENZAZIN? OR BENZOPYRIDI? OR AZANAPHTHALEN?)
L8         9888  S   L6 AND L7
L9         4610  S   L8 AND (3 OR 9)/NR
L10         560  S   L9 AND F/ELS
L11         502  S   L9 AND (FLUOROPHEN? OR FLUOROBENZ? OR TRIFLUOR? OR FLUOROMETH?)
L12           0  S   (L10 OR L11) AND (IR/ELS OR IRIDIUM)
L13       26761  S   (L4 OR L5 OR L6 OR L7) AND (FLUOROPHEN? OR FLUOROBENZ? OR TRIFLUOR? OR FLUOROMETH?)
L14          41  S   L13 AND (IR OR IRIDIUM)
L15          18  S   L14 AND TRIS
L16          39  S   L14 AND KAPPA
L17          18  S   L15 AND TRIFLUOR?
L18          18  S   L15 AND TRI FLUOR?
L19          18  S   L15 AND FLUOROMETH?
L20          36  S   L14 AND FLUOROMETH?
L21          40  S   L14 AND TRI FLUOR?
L22          40  S   L14 AND TRIFLUOR?
L23          36  S   L20 AND (L21 OR L22)
L24          18  S   (L17 OR L18 OR L19)
L25          36  S   (L23 OR L24)
L26        4638  S   (L4 OR L5 OR L6 OR L7 OR L8 OR L9 OR L10
                 OR L11 OR L12 OR L13) AND (BIFLUOR? OR DIFLUOR? OR (DI OR BI OR BIS)(1A)FLUOR?)
L27        4638  S   (L6 OR L7) AND L26
L28          43  S   L27 AND IR/ELS
L29          41  S   L27 AND IRIDIUM
L30          43  S   (L28 OR L29)
L31          37  S   L30 NOT L25
L32      245454  S   (L1 OR L2 OR L3 OR L4 OR L5 OR L6 OR L7 OR L8 OR L9 OR L10 OR L11 OR L12 OR L13 OR L14 OR L15
OR L16 OR L17 OR L18 OR L19 OR L20 OR L21 OR L22 OR L23 OR L24 OR L25 OR L26 OR L27 OR L28 OR L29 OR L30 OR L31)
NOT (L30 OR L25)
L33      245382  S   L32 AND (L6 OR L7)
L34       33856  S   L33 AND F/ELS
L35         128  S   L34 AND IR/ELS
L36         128  S   L35 NOT 2005?/ED
L37         121  S   L35 NOT 2004?/ED
L38          99  S   L35 NOT 2003?/ED
L39         104  S   L35 NOT 2002?/ED
L40          68  S   L35 AND L36 AND L37 AND L38 AND L39
L41          68  S   L40 NOT (L30 OR L25)
L42         100  S   435294?/RN
L43          84  S   L42 AND IR/ELS
L44          42  S   L43 AND TRIS
L45          31  S   L44 AND F/ELS
L46          29  S   L45 AND  (L6 OR L7)

     FILE 'HCAPLUS' ENTERED
L47           3  S   L46

     FILE 'REGISTRY' ENTERED
L48           1  S   PHENYLPYRIDINE/CN
L49           1  S   1-PHENYLPYRIDINIUM/CN
L50           2  S   2-PHENYLPYRIDINE/CN OR "2-PHENYLPYRIDINE
L51          17  S   1008-89-5/CRN
L52           2  S   52642-16-7/CRN
L53           1  S   52642-16-7/RN
L54           1  S   1008-89-5/RN
L55           1  S   QUINOLINE/CN
L56      657253  S   591.79.52/RID OR QUINOLIN? OR AZANAPHTHALEN? OR BENZAZIN? OR BENZOPYRIDIN? OR
BENZO(1W)PYRIDIN?
L57     1293875  S   46.156.30/RID OR PYRIDIN###(2A)PHENYL? OR PHENYLPYRIDIN?
L58       30719  S   L56 AND L57
L59       11739  S   L58 AND PHENYL?
L60        1034  S   L58 AND BENZEN?
L61       14183  S   46.150.18/RID AND L58
L62       14212  S   (L59 OR L60 OR L61)
L63        4195  S   L58 AND O/ELS AND F/ELS
L64          12  S   L62 AND IR/ELS
L65           0  S   L63 AND IR/ELS
L66           0  S   (L51 OR L52 OR L53 OR L54) AND IR/ELS
L67       14212  S   (L59 OR L60 OR L61) AND ((L51 OR L52 OR L53 OR L54 OR L55) OR (L56 AND L57))
L68       13293  S   L67 AND O/ELS
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     FILE 'REGISTRY' ENTERED
L69         2282  S   L68 AND F/ELS
L70            0  S   L69 AND IR/ELS

     FILE 'HCAPLUS' ENTERED
L71            0  S   L69(L)(IRIDIUM OR IR)
L72            5  S   L69 AND (IRIDIUM OR IR)
L73            3  S   L69 AND M(3A)METAL#####
L74            8  S   (L72 OR L73)
L75          124  S   (L51 OR L52 OR L53 OR L54 OR L55)(L)(IR OR IRIDIUM)
L76           44  S   (L51 OR L52 OR L53 OR L54 OR L55)(L)(IRIDIUM)
L77          110  S   (L51 OR L52 OR L53 OR L54 OR L55) AND ((M OR METAL#####)(3A)IR OR IRIDIUM)
L78            9  S   L64

     FILE 'REGISTRY' ENTERED
L79       640955  S   (L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR
                      L57 OR L58 OR L59 OR L60 OR L61 OR L62 OR L63 OR L64 OR L65 OR
                      L66 OR L67 OR L68 OR L69 OR L70) AND QUINOLIN?
L80            7  S   L79 AND PHENYLPYRIDIN?
L81           54  S   L79 AND PHENYL PYRIDIN?
L82            7  S   L79 AND (AZANAPHTHALEN? OR BENZAZIN? OR
                      BENZOPYRIDIN? OR BENZO(1W)PYRIDIN?)
L83       640955  S   L79 AND QUINOLIN?
L84         3579  S   L83 AND PYRIDIN?(2A)PHENYL?
L85            0  S   L84 AND F/ELS AND O/ELS AND IR/ELS
L86          413  S   L84 AND F/ELS AND O/ELS

     FILE 'HCAPLUS' ENTERED
L87           17  S   L78 OR L74
L88           10  S   (L80 OR L81 OR L82) AND L86
L89           10  S   L88 NOT L87
L90          146  S   ?QUINOLIN?(8A)PHENYLPYRIDIN?
L91           32  S   ?QUINOLIN?(8A)PHENYL PYRIDIN?
L92           65  S   (L90 OR L91) AND (F OR ?FLUOR?)
L93            0  S   L92 AND (M(4A)(METAL##### OR IR))
L94            6  S   L92 AND IRIDI?
L95           36  S   L92 AND TRIFLUOR?
L96           32  S   L92 AND TRIFLUOROMETH?
L97           32  S   L92 AND (O OR OXYGEN OR OXO OR OXY)

     FILE 'REGISTRY' ENTERED
L98         2733  S   (L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR
                      L57 OR L58 OR L59 OR L60 OR L61 OR L62 OR L63 OR L64 OR L65 OR
                      L66 OR L67 OR L68 OR L69 OR L70) AND IR/ELS
L99       272896  S   (L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR
                      L57 OR L58 OR L59 OR L60 OR L61 OR L62 OR L63 OR L64 OR L65 OR
                      L66 OR L67 OR L68 OR L69 OR L70) AND O/ELS AND N/ELS AND F/ELS
L100      183028  S   L99 AND ?PYRIDIN?
L101      183028  S   L99 AND PYRIDIN?
L102       71394  S   L101 AND TRIFLUOROMETH?

     FILE 'HCAPLUS' ENTERED
L103           45  S   (L87 OR L88 OR L89 OR L90 OR L91 OR L92 OR
                      L93 OR L94 OR L95 OR L96 OR L97) AND (L98 OR L102)
L104           27  S   L87 OR L89
L105           25  S   L103 NOT L104
L106           11  S   L105 AND 2002-2005/PRY,PY
L107           14  S   L105 NOT L106
L108           14  S   L105 AND 1990-2001/PRY,PY
L109           19  S   L107 OR L108

     FILE 'REGISTRY' ENTERED
L110       17738  S   591.79.52/RID AND 46.156.30/RID
L111          44  S   L110 AND (OXYQUIN? OR OXOQUIN?)
L112        4872  S   L110 AND (OXY OR OXO)(4A)QUINOLIN?
L113         434  S   L110 AND FLUOROPHENYL?
L114         479  S   L110 AND BIS
L115          33  S   L110 AND TRIS
L116         834  S   L110 AND FLUOROMETH?
L117          17  S   L113 AND L114
L118           0  S   L113 AND L115
L119           8  S   L113 AND L116
L120          58  S   L114 AND L116
L121          58  S   L114 AND L116
L122         158  S   L111 OR L115 OR (L117 OR L118 OR L119 OR L120 OR L121)
L123           0  S   L122 AND IR/ELS
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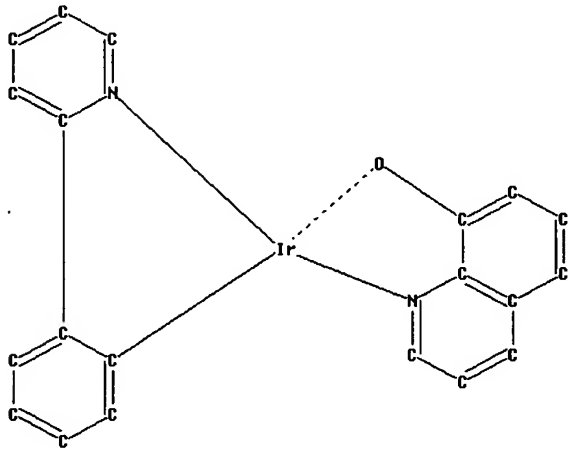
FILE 'HCAPLUS' ENTERED

L124	1	S	L122 AND IRIDIUM
L125	0	S	L122 AND (M OR METAL####)(3A)IR
L126	1	S	L122 AND (M(3A)METAL####)
L127	1	S	L122 AND IRIDIUM
L128	61	S	L122 AND ?PYRIDIN?
L129	67	S	L122 AND ?QUINOLIN?
L130	42	S	(L128 OR L129) AND (BIS OR TRIS OR BIDENT? OR TRIDENT? OR TRI OR BI OR DI)
L131	54	S	L128 AND L129
L132	35	S	L122 AND ?QUINOLIN?(6A)?PYRIDIN?
L133	46	S	L109 OR L104
L134	71	S	(L124 OR L125 OR L126 OR L127 OR L128 OR L129 OR L130 OR L131 OR L132) NOT L133
L135	29	S	L134 AND 2002-2005/PRY,PY
L136	42	S	L134 NOT L135
L137	52	S	L134 AND 1988-2001/PRY,PY
L138	58	S	L136 OR L137
L139	1	S	L138 AND IRIDIUM
L140	25	S	L138 AND L132
L141	26	S	(L139 OR L140)
L142	32	S	L138 NOT L141
L143	22	S	L142 AND (F OR ?FLUOR?)(10A)(?PYRIDIN? OR ?QUINOLIN?)
L144	0	S	L142 AND IR

FILE 'REGISTRY' ENTERED

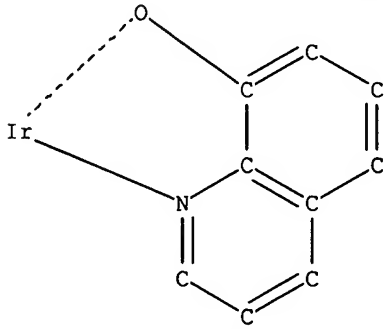
L145 STRUCTURE UPLOADED



L146 0 SEA SSS SAM L145

FILE 'CAPLUS, MARPAT, MARPATPREV, REGISTRY' ENTERED

L147 0 SEA SSS SAM L145
L148 0 SEA SSS SAM L145
L149 STRUCTURE UPLOADED



L150 5 SEA SSS SAM L149
L151 0 SEA SSS SAM L149
L152 56 SEA SSS FUL L149
L153 0 SEA SSS FUL L149
L154 0 SEA SSS FUL L149

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     FILE 'CAPLUS, MARPAT, MARPATPREV, REGISTRY' ENTERED
L155         26  S   L152
                 SET DUPORDER FILE
L156         26 DUP REM L154 L153 L155 (0 DUPLICATES REMOVED)
                 ANSWERS '1-26' FROM FILE CAPLUS

     FILE 'REGISTRY' ENTERED
L157          1  S   L152 AND (46.156.30/RID OR PHENYLPYRIDIN? OR PYRIDIN?(2A)PHENYL?)

     FILE 'HCAPLUS' ENTERED
L158          1  S   L157

     FILE 'REGISTRY' ENTERED
L159          2  S   L152 AND F/ELS

     FILE 'HCAPLUS' ENTERED
L160          1  S   L159

     FILE 'STNGUIDE' ENTERED

     FILE 'CAPLUS' ENTERED
L161         24  S   L155 NOT (L157 OR L159)

     FILE 'REGISTRY' ENTERED
L162          1  S   TRIPHENYLPHOSPHINE/CN
L163        409  S   603-35-0/CRN
L164         57  S   TRIS AND 3 5 AND BIS AND TRIFLUOROMETH? AND PHENYLPHOSPH?
L165         17  S   TRIS 3 5 AND L164
L166          6  S   L165 AND BIS TRIFLUOR?
L167         42  S   2 6 DIMETHYL AND PHENYL AND ISOCYANIDE
L168         42  S   2 6 DIMETHYL? AND L167
L169          1  S   3 TRIFLUOR? AND METHYLPHENYL? AND ISOCYANID
L170          2  S   4 TOLUEN? AND SULFON? AND METHYL AND ISOCYANIDE
L171          0  S   L162 AND (46.156.30/RID OR PHENYLPYRIDIN? OR PYRIDIN?(2A)PHENYL?)
L172          0  S   L162 AND (46.156.30/RID OR PYRIDIN?)
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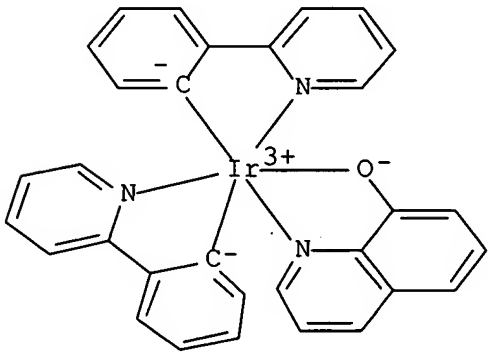
L78 ANSWER 6 OF 9 HCAPLUS COPYRIGHT ACS on STN
AN 2002:427663 HCAPLUS
DN 137:26174
ED Entered STN: 07 Jun 2002
TI Metal coordination compound, luminescence device and display apparatus
IN Tsuboyama, Akira; Mizutani, Hidemasa; Okada, Shinjiro; Takiguchi, Takao; Miura, Seishi; Noguchi, Koji; Moriyama, Takashi; Igawa, Satoshi; Kamatani, Jun; Furugori, Manabu
PA Canon Kabushiki Kaisha, Japan

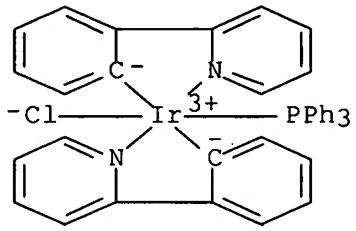
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1211257	A2	20020605	EP 2001-128237	20011128
	EP 1211257	A3	20031029		
	JP 2003081989	A2	20030319	JP 2001-354703	20011120
	US 2003054198	A1	20030320	US 2001-995608	20011129
	CN 1364847	A	20020821	CN 2001-138389	20011130
PRAI	**JP 2000-367080**	**A**	**20001201**		
	JP 2001-198439	A	20010629		
	JP 2001-354703	A	20011120		

OS MARPAT 137:26174
AB The present invention relates to a metal coordination compd., an org. luminescence device using the metal coordination compd. and display app. using the device. The present invention relates to a metal coordination compd. having formula LmML'n (M = Ir, Pt, Ph, Pd; L = bidentate ligand; L' = bidentate ligand different from L; m = 1, 2, 3; n = 0, 1, 2; n+m = 2 or 3) appearing after it as a luminescence material so as to allow stable luminescence efficiency. The present invention relates to an org. electroluminescence device having high responsiveness and high efficiency.
IT **433692-44-5**
RL: TEM (Technical or engineered material use); USES (Uses)
(metal coordination compd. for luminescence device and display app.)
RN 433692-44-5 HCAPLUS
CN Iridium, bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](8-quinolinolato-.kappa.N1,.kappa.O8)- (9CI) (CA INDEX NAME)



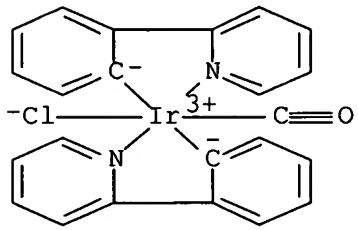
OK for Clms 12, 13 but no fluorine

L109 ANSWER 18 OF 19 HCAPLUS COPYRIGHT ACS on STN
AN 1985:495440 HCAPLUS
DN 103:95440
ED Entered STN: 22 Sep 1985
TI Luminescence spectroscopy and oxidative quenching of orthometallated complexes of iridium(III)
AU King, K. A.; Finlayson, M. F.; Spellane, P. J.; Watts, R. J.
CS Quantum Inst., Univ. California, Santa Barbara, CA, 93106, USA
SO Scientific Papers of the Institute of Physical and Chemical Research (Japan) **(1984)**, 78(4), 97-106
CODEN: SPIPAG; ISSN: 0020-3092
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB The excited states of several mononuclear orthometallated Ir(III) complexes of 2-**phenylpyridine** (ppy) and benzo[h] **quinoline** (bzq) were characterized by luminescence measurements. These complexes emit from metal-to-ligand charge-transfer (MLCT) or ligand-centered (LC) excited states, both in glasses at 77 K and in inert solvents at ambient temp. The degree of MLCT or LC character in their excited states can be controlled by adjusting the no. of Ir-C bonds and the nature of the other ligands in the metal coordination sphere. The ability of excited states of orthometallated species to act as strong reducing agents in photoredox processes is illustrated by quenching of the emission of fac-Ir(ppy)3 by a variety of oxidative quenchers; these studies indicate an excited-state oxidn. potential of about +1.8 V for this species.
IT **52352-02-0 92220-65-0 94928-86-6 97894-10-5 97894-11-6 97894-12-7 97894-13-8 97894-14-9**
RL: PRP (Properties)
(luminescence and oxidative quenching of)
RN 97894-11-6 HCAPLUS
CN Iridium, chlorobis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](triphenylphosphine)- (9CI) (CA INDEX NAME)

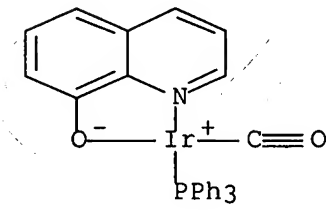


OK for the Claim 15 structure, except that there is no fluorine.

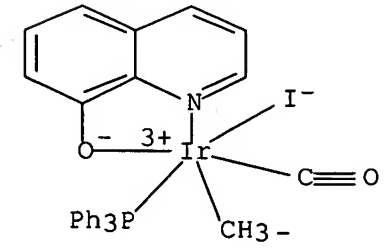
RN 97894-12-7 HCAPLUS
CN Iridium, carbonylchlorobis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-



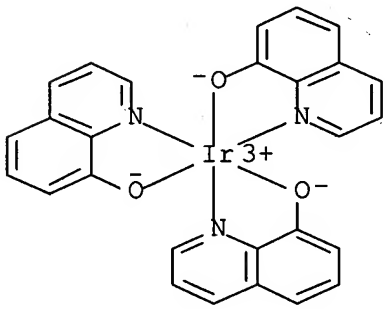
L161 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1981:149422 CAPLUS
DN 94:149422
TI 8-Oxyquinolate iridium(I) complexes and their oxidative-addition reactions
AU Uson, Rafael; Oro, Luis A.; Ciriano, Miguel A.; Gonzalez, Rafael
CS Dep. Inorg. Chem., Univ. Zaragoza, Zaragoza, Spain
SO Journal of Organometallic Chemistry **(1981)**, 205(2), 259-71
CODEN: JORCAI; ISSN: 0022-328X
DT Journal
LA English
AB The novel 16-electron complex [IrQ(COD)] (HQ = 8-hydroxyquinoline; COD = 1,5-cyclooctadiene) adds monodentate phosphines, phosphites, or activated olefins irreversibly to give pentacoordinate [IrQ(COD)L] (L = PPh3, P(OPh)3, maleic anhydride, or tetracyanoethylene). Reaction of [IrQ(COD)] with some diphosphines leads to the substitution products [IrQ(diphos)] (diphos = 1,2-bis-(diphenylphosphino)ethane or cis-1,2-bis(diphenylphosphino)ethylene). CO displaces the COD group from the complexes giving either [IrQ(CO)2] or [IrQ(CO)L], and the latter undergo oxidative addn. reactions with SnCl4, Me3SiCl, Me3SnCl, MeI, allyl bromide, PhCOCl, MeCOCl, Cl2, Br2, TlCl3, and HCl leading to novel Ir(III) complexes.
IT **76770-93-9P 76770-94-0P 76770-95-1P**
76821-69-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and oxidative addn. reactions of)
RN 76821-69-7 CAPLUS
CN Iridium, carbonyl(8-quinolinolato-N1,O8)(triphenylphosphine)-, (SP-4-3)-(9CI) (CA INDEX NAME)



RN 76770-97-3 CAPLUS
CN Iridium, carbonyliodomethyl(8-quinolinolato-N1,O8)(triphenylphosphine)-(9CI) (CA INDEX NAME)

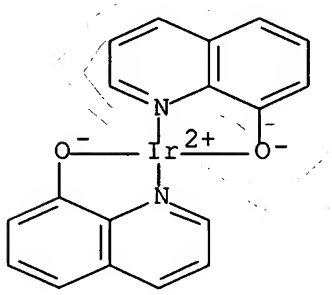


L161 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1995:57590 CAPLUS
DN 122:150301
TI Chromatographic separation of platinum metals on silica modified with macrocyclic compounds
AU Szczepaniak, W.; Szymanski, A.
CS Faculty of Chemistry, A. Mickiewicz University, Poznan, 60-780, Pol.
SO Acta Chromatographica (1993), 2, 7-20
CODEN: ATCREU; ISSN: 1233-2356
DT Journal
LA English
AB It is shown that new macrocyclic phases chem. bonded with silica can be used for chromatog. sepn. and identification of six Pt metal oxinates occurring in the form of chelates with 8-hydroxyquinoline. Sepn. characteristics of three macrocyclic packings are compared. Calibration curves of five Pt metal complexes are presented, and their range of linearity and also detection limit are detd. It is also indicated that for the chromatog. system applied, stationary phase-mobile phase, the sepd. chelate of metal cation is fairly complex, and therefore does not permit the unambiguous definition of sepn. mechanism, which is probably the result of many interactions involved.
IT **15671-12-2**, Iridium(III) 8-hydroxyquinolate
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(chromatog. sepn. and identification of)
RN 15671-12-2 CAPLUS
CN Iridium, tris(8-quinolinolato-.kappa.N1,.kappa.O8)- (9CI) (CA INDEX NAME)



Three of one of the Fragments of claims 12, 13

L161 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1984:182110 CAPLUS
DN 100:182110
TI Voltammetric behavior of tris(8-quinolinolato)iridium(III) complex in dimethylformamide
AU Roffia, S.; Concialini, V.; Paradisi, C.; Ciano, M.
CS Inst. Chim. "G. Ciamician", Univ. Bologna, Bologna, 40126, Italy
SO Journal of Electroanalytical Chemistry and Interfacial Electrochemistry (1984), 161(2), 305-12
CODEN: JEIEBC; ISSN: 0022-0728
DT Journal
LA English
AB The polarog. and cyclic voltammetric behavior of Ir(QO)3 (QO- = 8-quinolinolato anion) was studied in DMF. In cyclic voltammetry, at sufficiently high sweep ratess (.nu.) the complex exhibits three 1-electron reversible redn. peaks. By decreasing v the 1st peak becomes irreversible and 2 other cathodic peaks appears. Concomitantly, the 2nd and 3rd peaks, obsd. at high v, disappear. The irreversibility of the 1st peak is attributed to a 1st order chem. reaction, involving the product of the 1st 1-electron transfer, and in which theformation of Ir(QO)2 and QO- takes place. The 2nd and 3rd peaks obsd. at low v, are attributed, resp., to the redn. of Ir(QO)2 and QO- formed in the 1st process. As to the polarog. behavior, the processes responsible for the 3 waves obsd. could be similar to those described for the 3 redn. peaks obsd. in cyclic voltammetry at low v. A qual. MO discussion of the character of the e mol. levels involved in the redn. process is also reported.
IT **89885-11-0P**
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(formation and electrochem. oxidn. of)
RN 89885-11-0 CAPLUS
CN Iridium, bis(8-quinolinolato-N1,O8)- (9CI) (CA INDEX NAME)



Two of one of the fragments of Claims 12, 13